

**LINCOLN**  
WELDERS

# IDEALARC

## AC and AC/DC Arc Welders

### "TM" Models

**The welders  
that let you select  
the features you need.**

*These features you get on  
all "TM" models:*

- Outstanding arc stability
- Extra wide current range
- Continuous dial type current control
- Recessed controls
- On-Off indicator light
- Easily changed input voltage connections

*These features you select if needed:*

- Line Contactor (starter)
- Power factor correction
- Remote control of current and polarity
- Low voltage contactor
- 115 volt pushbutton circuit
- Arc booster
- Undercarriage

**YOU PAY FOR  
NO MORE  
THAN YOU NEED!**



## THE LINCOLN ELECTRIC COMPANY

*The World's Largest Manufacturer of Arc Welding Equipment*

**CLEVELAND 17, OHIO**



## Basic Idealarc "TM" Welder

The Idealarc "TM" welder is a transformer-type machine with a moveable-core reactor current control. This machine is available either as a straight AC welder or as a combination AC/DC rectifier welder. With the AC/DC machine, you can weld with AC current and then change to DC welding by just flipping a switch.

Available in sizes from 300 to 650 amperes, the basic Idealarc "TM" welder has standard features that make it the most advanced mechanical transformer type welder on the market. Excellent welding characteristics and ease of operation result from such features as . . .

**SELECTOR SWITCH** — The selector switch on the combination AC/DC models has "DC+", "DC—" and "AC" positions. A new design, it is exceptionally rugged and capable of standing heavy use under severe conditions.

**CONTINUOUS CURRENT CONTROL** — You set current exactly where you want it with one convenient continuous current control handle on the front of the machine. An easily read indicator dial shows amperage setting. A spring loaded knob on the control handle extends when grasped so that the operator holds it conveniently and adjusts current easily; retracts out of the way when released.

**OVERLOAD PROTECTION** — All AC/DC Idealarcs and all straight AC's equipped with line contactors have built-in overload protection. This prevents damage to the welder from excess heat in the windings or rectifier regardless of the source of heat. Thermostats open the contactor and take the machine off the line before overheating becomes serious. The machine cannot be started until it has cooled sufficiently to prevent damage.

**INDICATOR LAMP** — A red light provides a visible signal that the welder is turned on. This lessens the chance that the machines will be left on overnight or over the weekend when they should be turned off. Bulb will operate for a lifetime without burning out.

**RECESSED CONTROL PANEL** — The entire face of the machine is recessed to prevent accidental damage to the controls. Output studs are recessed still further to give added protection against accidental short circuits across them.

**STRAIN RELIEF LOOP** — A rugged strain relief loop under the output terminals reduces the chances of loosened contacts and cable overheating at the studs from excessive tension on the cables. This strain relief is typical of the many small but important improvements that contribute to the outstanding performance of the Idealarc "TM" welder.

**AMPLE COOLING** — An exceptionally large fan forces quantities of clean air from the top of the welder down over rectifier stacks and windings and out the bottom of the side and front to provide ample cooling for both stacks and windings. Large fan motors are enclosed and have sealed ball bearings. More efficient cooling is another factor contributing to the long life which you will receive from your Idealarc welder.

**CONVENIENT MAINTENANCE** — Maintenance personnel really appreciate the accessibility and ease of maintenance of the Idealarc "TM" models. The top and sides of the machine remove easily and individually for routine inspection and maintenance. All parts are readily accessible.

**SINGLE PHASE POWER** — You can use Idealarc "TM" model welders on any type of AC power source because it is a single phase machine. You are not limited to three phase power supply.

**CONNECTS TO TWO VOLTAGES** — All dual voltage "TM" model welders with line contactors are reconnectable without changing any leads by merely moving a contact plate. The panel automatically reads the voltage for which it is connected.

**WEATHER PROOFED** — Specially designed louvers plus a double dip of the entire chassis in an insulating compound provide weatherproofing and extra protection against humidity and corrosive atmospheres.

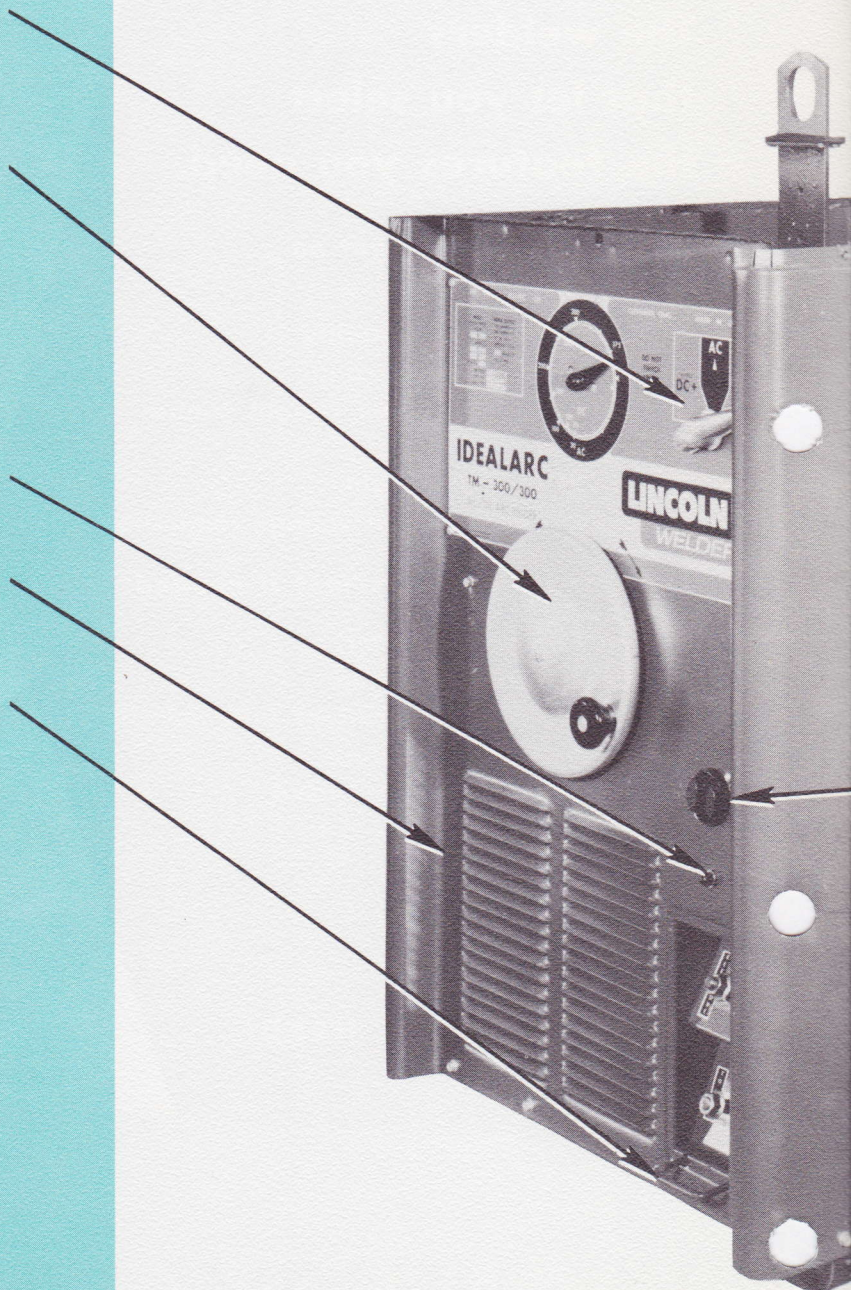
Do you want an AC welder, or one that will weld with either AC or DC? What size machine and special features do you need? Lincoln's new Idealarc "TM" welders, the basic AC or AC/DC machine, can have special features added to accommodate any welding requirement.

### Outstanding Performance

Unexcelled arc stability, a wide current range that exceeds NEMA requirements, easy to use controls, and the versatility of current selection with an AC/DC machine all help your welders do more and better welding.

### Low Initial Cost

You buy exactly what you need . . . you pay for





# FEATURES

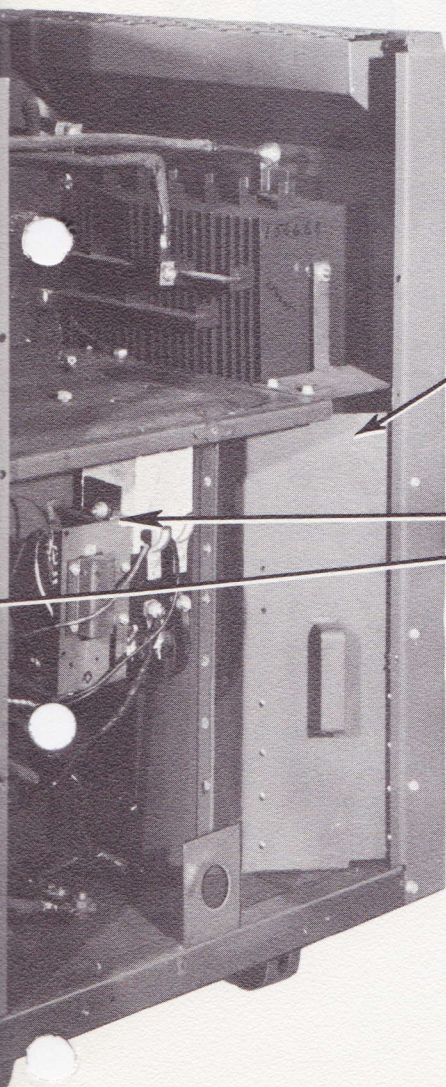
no more than you need. Should your conditions change at a later date, several optional features are available as kits for field installation.

## Easy Accessibility

The welder side panels may be removed without taking off the welder top. This provides easy access to the internal parts of the welder for hook-ups, routine cleaning and preventive maintenance.

## Minimum Maintenance

Lincoln's 63 years of engineering and manufacturing experience, plus extensive laboratory and field testing of new equipment, assure Idealarc owners of the most trouble-free service available.



## Optional Features

In addition to the outstanding regular features of the Idealarc "TM" welders, there are also available several optional features that can help you where you may have special conditions that require them. All these features may be factory installed. Some are also available as a kit for installation in the field. Either way, the fact that features are optional lets you buy a machine that fulfills all your welding needs without paying for features you don't need.

**REMOTE CURRENT CONTROL**—If your application calls for the weldor to frequently change electrode size while at some distance from his machine, you can save a lot of time by providing him with a remote current control. By taking a small control with him, he can raise or lower the amperage setting on the machine to suit the particular electrode size he is using. It saves his running back and forth to the machine, or having a helper stand by, yet lets him use both small and large sizes on one joint to affect maximum welding economy. For 60 and 50 cycle models only.

**REMOTE POLARITY CONTROL**—On some applications is also necessary to change electrode type. For example, it may be necessary to put in a root pass with Jetweld LH-70 or Fleetweld 5 electrodes and finish the weld with Improved Fleetweld 47 electrodes. The remote selector switch control lets the operator change the machine setting from AC to DC+ or DC- (or vice-versa) to provide the proper type of current for each electrode *without leaving his welding station*. Time and cost savings under such conditions can be substantial. For 60 and 50 cycle models only.

**POWER FACTOR CORRECTION CONDENSERS\***—Power factor condensers improve power factor and reduce input current. You can install lighter input leads and reduce your KVA power demands with these condensers.

**LOW VOLTAGE CONTACTOR\***—The maximum open circuit output voltage of the Idealarc "TM" is a safe 73 volts. The low voltage contactor may be used when operating conditions warrant exceptional safety precautions, such as on scaffolding. It reduces the open circuit voltage to 35 DC volts when the machine is not welding. When the operator strikes the arc, the welder automatically returns to normal output voltage. For 60 and 50 cycle models only.

**ML-2 POWER PACK\***—Adapts the TM 650/650, or 500/500 welder for use as a power source for ML-2 "Squirt" welder. Provides 40va of 110-volt DC plus 1100va of 115-volt AC, or 1150va of the AC only. Available factory installed or as a kit (K-730) for field installation.

**LINE CONTACTOR**—You start the Idealarc "TM" by simply pushing a heavy duty pushbutton on the front of the machine. The pushbutton operates a magnetic contactor type starter. In case of power failure, the contacts open and take the machine off the line until power returns and the start button is pushed again. The line contactor is standard equipment on AC/DC models; optional on straight AC models.

**115 VOLT PUSHBUTTON CIRCUIT**—This feature modifies the pushbutton circuit on the starter so that it meets special safety regulations which require that pushbuttons operate only in 115 volt circuits.

**ARC BOOSTER**—The arc booster, long used on Lincoln transformer welders, provides a surge of current during arc striking. This surge improves striking characteristics and gives added penetration at the start of the weld. Can be turned off by a switch when welding thin sheet metal. It operates on both AC and DC.

## UNDERCARRIAGES

(Optional)

Heavy duty, three wheeled undercarriages provide maximum portability for machines that frequently move from one place to another in the shop. Available with either steel or solid rubber tired wheels, the undercarriage pulls easily and requires little extra floor space beyond that required for the welder itself.

\*Also available as a kit for field installation.



## HOW TO ORDER THE "TM" WELDER ...TAILOR-MADE TO YOUR REQUIREMENTS

First, decide whether you need a combination AC and DC welder or a straight AC machine. Then determine the *maximum* amount of welding current required on your welding application. This lets you specify the size of the basic Idealarc "TM" AC or AC/DC welder and determines

which model you need. Finally, decide which optional features are required. Enter your order accordingly, clearly stating the model and type (K-number) of the welder, optional features desired, and input power on which it will be used.

### SPECIFICATIONS

Model		TM-300	TM-300/300	TM-400	TM-400/400	TM-500	TM-500/500	TM-650	TM-650/650
Type	60 cycle 50 cycle 25 cycle	K-1103 K-1111 K-1119	K-1104 K-1112 K-1120	K-1105 K-1113	K-1107 K-1115	K-1108 K-1116	K-1110 K-1118	K-1121	K-1126
NEMA Output									
AC Amperes		300 amps.	300 amps.	400 amps.	400 amps.	500 amps.	500 amps.	650 amps.	650 amps.
DC Amperes			300 amps.		400 amps.		500 amps.		650 amps.
Arc Voltage		40 volts	40 volts	40 volts	40 volts	40 volts	40 volts	40 volts	40 volts
Duty Cycle		60%	60%	60%	60%	60%	60%	60%	60%
Output Current Range									
AC		30-450 amps.	30-450 amps.	40-600 amps.	40-600 amps.	50-750 amps.	50-750 amps.	50-850 amps.	50-850 amps.
DC			45-375 amps.		60-500 amps.		75-625 amps.		75-750 amps.
Input Current (on 220V and @ rated output)									
With Condensers		90 amps.	98 amps.	122 amps.	130 amps.	146 amps.	154 amps.	186 amps.	200 amps.
Without Condensers		108 amps.	108 amps.	144 amps.	144 amps.	178 amps.	178 amps.	232 amps.	232 amps.
Weights (Approx.)									
Net		432 lbs.	603 lbs.	496 lbs.	709 lbs.	544 lbs.	794 lbs.	627 lbs.	931 lbs.
Shipping, Domestic		485 lbs.	658 lbs.	549 lbs.	764 lbs.	597 lbs.	849 lbs.	680 lbs.	986 lbs.
Shipping, Export		572 lbs.	788 lbs.	636 lbs.	894 lbs.	684 lbs.	979 lbs.	767 lbs.	1116 lbs.

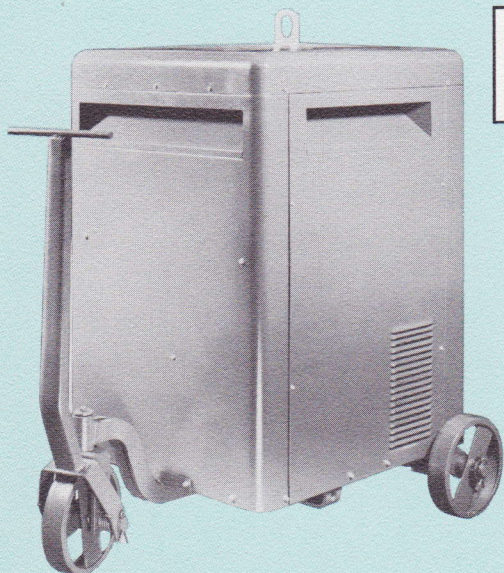
#### INPUT POWER (Specify when ordering)

**Standard Voltages** 60 cycle models 220/440  
50 cycle models 220/380/440  
25 cycle models 208, 220, or 440  
All models are for single phase (or any  
one of 2 or 3 phase) power.

**Special Voltages** are available at slight extra charge.

#### DIMENSIONS

	Height	Width	Depth
<b>AC Welders</b>			
Machine, overall	39 $\frac{7}{8}$ "	26 $\frac{1}{8}$ "	28 $\frac{1}{2}$ "
Export crate	55"	36"	36"
<b>AC/DC Welders</b>			
Machine, overall	44 $\frac{7}{8}$ "	26 $\frac{1}{8}$ "	28 $\frac{1}{2}$ "
Export crate	60"	36"	36"
<b>Mounting Holes</b> (centers, $\frac{5}{8}$ " x $\frac{7}{8}$ " slots)	—	21 $\frac{7}{8}$ "	14 $\frac{1}{2}$ "



Inexpensive undercarriages provide easy portability when Idealarc welders must be moved around the shop frequently.

*For further information call*

**THE LINCOLN ELECTRIC COMPANY** **LINCOLN**  
CLEVELAND 17, OHIO **...USA**

World's largest manufacturer of arc welding equipment